



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,760	03/05/2002	Jonathan Manuel Watts	100202161-1	6842

7590 01/02/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

INOA, MIDYS

ART UNIT	PAPER NUMBER
----------	--------------

2188

3

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,760

Applicant(s)

WATTS, JONATHAN MANUEL

Examiner

Midys Inoa

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on March 5th, 2002 has been considered by the examiner.

Drawings

2. The drawings filed on March 5th, 2002 have been accepted by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6, 11-13, 16, 21-23, and 26, are rejected under 35 U.S.C. 102(b) as being anticipated by Chan et al. (5,822,772).

Regarding Claims 1, 11, and 21, Chan et al. teaches a memory controller in which access commands or requests are unified in one unified command queue 111. These requests could be from multiple requestors in the case where the memory is shared memory (Column 5, lines 38-40). The requests are then reordered into a plurality of queues 1-4 depending on where in the memory each command is accessing ("arbitrating... re-ordering requests"). Selection logic 131 decides which of the queues is to be active while the others are on standby. In this manner, the selection logic 131 selects the request that is to access the memory so that the access request are completed in an out of order fashion, they are not completed in the order that they came in, but

Art Unit: 2188

rather in order of where in memory the command is to access ("non-FIFO", Figure 4 and Column 5, line 49 – Column 6, line 6).

Regarding Claims 2-3, 12-13, and 22-23, Chan et al. discloses keeping track of out of order transactions by recognizing each command by their tag (Column 2, lines 1-12).

Regarding Claim 6, 16, and 26, Chan et al. teaches a memory controller in which access commands or requests are unified in one unified command queue 111. These requests could be from multiple requestors in the case where the memory is in a shared memory system (Figure 4, Column 5, lines 38-40).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 14, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (5,822,772) in view of Hagersten et al. (5,950,226). Chan et al. teaches the invention as set forth by claim 3 above. Chan et al. does not teach transmitting the identification tag of an access command and a strobe signal to a requestor that sent the selected request. Hagersten et al. discloses sending a signal back to a requestor in order to notify the requestor that a particular request has been completed (Column 23, lines 25-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the completion notice of Hagersten et al. with the access command arbitration system of Chan et al. since adding this

Art Unit: 2188

capability would allow the requestor to know when a request has been completed and when a request must be re-submitted.

7. Claims 5, 7-10, 15, 17-20, 25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (5,822,772) in view of Hagersten et al. (5,950,226) as applied to claims 4, 14, and 24 above, and further in view of Microsoft Computer Dictionary, Fourth Edition.

Regarding Claims 5, 15, and 25, the invention of Chan et al. in view of Hagersten et al. does not disclose a tag containing additional data related to the request. Microsoft Computer dictionary discloses a tag containing information about a record, which in many cases may include information such as address or storage location (page 435). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add this functionality to the tag of Chan et al. in view of Hagersten et al. since such information could allow the local system to know where the request is coming from and therefore, send a request completed signal once a request has been completed.

Regarding Claims 7, 17, and 27, Chan et al. teaches the unification of multiple access commands in a Unified Command Queue 111 in which some of the commands can be write requests (Figure 4).

Regarding Claim 8, 18, and 28, Microsoft Computer dictionary discloses a tag containing information about a record, which in many cases may include information such as address or storage location (page 435).

Art Unit: 2188

Regarding Claims 9, 19, and 29, Chan et al. teaches the unification of multiple access commands in a Unified Command Queue 111 in which some of the commands can be read requests (Figure 4).

Regarding Claims 10, 20, and 30, Microsoft Computer dictionary discloses a tag containing information about a record, which in many cases may include information such as address or storage location (page 435).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Midys Inoa whose telephone number is (703) 305-7850. The examiner can normally be reached on M-F 7:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Midys Inoa

Midys Inoa
Examiner
Art Unit 2188

MI

Mano Padmanabhan
12/29/03

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER
TC210